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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,334	07/02/2003	Horst Wittur	8181-90050	3803
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WELSH & KATZ, LTD 120 S RIVERSIDE PLAZA 22ND FLOOR CHICAGO, IL 60606			PICO, ERIC E	
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/612,334	Applicant(s) WITTUR ET AL.	
	Examiner Eric Pico	Art Unit 3652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07/02/2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Drawings

2. The drawings are objected to because Figure 1a and 1b cannot also be considered Figure 1 see Page 7, Line 12. Also, Figures 1a and 1b are objected to because Figures 1a and 1b are interconnected by numerals 1,2, and 3. Also Figures 2-5 are objected to because each figure should be individually labeled (Fig. 2a, 2b...) note that this would also require amendments to the brief description of the figures.

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the perpendicular arrangement of the drive sheave and the counter sheave in Claim 11, the double brake which acts on both sides of at least one guide rail for the cage referred in Claim 20 and a double disk clasp brake referred in Claim 21 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended

Art Unit: 3652

replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities: On Page 4, Lines 15-16, it is improper to refer to the claims in the specification. The phrase "From FIG. 1b is can be seen" on Page 8 Line 6 is improper grammar. It is unclear on Page 9 Line 10 what is meant by the term "a.o." The phrase "breaking device is provided for an said cage" on Page 12 Line 5 is improper grammar. Throughout the specification the word "said" is used for example, see Page 7, Line 25. The word "said" should be replaced by the proper article either "a" or "the."

Appropriate correction is required.

Claim Objections

5. Claims 16 and 20 are objected to because of the following informalities: The phrase "characterized in that said a loose pulley suspension" in Claim 16, Line 1 is improper grammar. The phrase "characterized in that said on said cage" in Claim 20, Lines 1 and 2 is improper grammar. Appropriate correction is required.
6. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The specification does not disclose how the drive sheave and counter sheave can be arranged perpendicularly to one another, as required by claim 11.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
8. Claim 2-4, 6, and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Dependant claim 2 recites that the ratio of drive sheave diameter to nominal diameter of the carrier cables essentially is 30 while the independent claim 1 already states a drive sheave diameter to carrier cable nominal diameter ratio to be 40.

Art Unit: 3652

9. With respect to claim 3 and 4, it is unclear what is meant by "interference" (Claim 3, Line 2 and Claim 4, Line 2). The term can be interpreted as interference between cable and groove or between the plurality of grooves.

10. With respect to Claim 6, the recitation of the ratio of drive sheave diameter to nominal diameter of the carrier cables preferably being about 34 while the independent claim 1 already states a drive sheave diameter to carrier cable nominal diameter ratio being 40. Also, it is unclear what is meant by "the ratio of drive sheave diameter of essentially 7 mm" (Claim 6, Lines 3-4). A ratio must create a relation of two things and is unitless.

11. With respect to Claim 21, it is indefinite what a "double disk clasp brake" is stated in Claim 21, Line 2.

12. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte*

Art Unit: 3652

Hasche, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 4 recites the broad recitation minor interference, and the claim also recites interference of 1 to 3 mm, which is the narrower statement of the range/limitation. Claim 5 recites the broad recitation nominal diameter between 5 to 7 mm, and the claim also recites 6 mm in particular, which is the narrower statement of the range/limitation. Claim 7 recites the broad recitation cage loads up to 2000 kg, and the claim also recites 300 kg to 1000 kg, which is the narrower statement of the range/limitation.

13. Claim 13 recites the limitation "said elevator frame" in Claim 13, Line 2. There is insufficient antecedent basis for this limitation in the claim.

14. Claim 14 recites the limitation "said cage frame" in Claim 14, Line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claim 1 rejected under 35 U.S.C. 103(a) as being unpatentable over Hamaguchi (U.S. Patent# 6626266) in view of Heikkinen (U.S. Patent# 4756388) and the acknowledged prior art. An elevator with counter sheave 17, a cage 4, guide rails 6 for said cage 4 and a counterweight 5, for a machine-room-free installation. The carrier cables 14 runs in semicircular grooves. Hamaguchi does not specifically teach a

Art Unit: 3652

gearless cable-operated elevator with a drive sheave drive twice wrapped by several parallel carrier cables. Heikkinen teaches the use of a gearless cable-operated elevator with a drive sheave 3 twice wrapped by several parallel carrier cables 4. Usings Heikkinen's teachings a lower elevator cage weight is achieved. Greater suspension heights without compensating cables are possible. A gearless elevator can be built without compensating cables for suspension heights up to about 60 m. Likewise, thinner cables can be used and thereby the diameter of the traction sheave can also be reduced. As a result, the torque on the shaft of the gearless motor will be less and it also becomes possible to use a smaller motor. Therefore, it would have been obvious to one of the ordinary skill in the art to use a gearless cable-operated elevator with a drive sheave twice wrapped by several parallel carrier cables for economic and space saving advantages. In regards to the ratio of drive sheave diameter to nominal diameter of carrier cables being 40. The acknowledged prior art discloses in the application that this is a common calculation rule to which the drive sheave diameter is to correspond at least to 40-times the carrier cable diameter see Page 4, Lines 19-20. Therefore, it would have been obvious to one of the ordinary skill in the art to use this common calculation rule for obtaining small drive sheave diameters.

17. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hamaguchi (U.S. Patent# 6626266) in view of Heikkinen (U.S. Patent# 4756388) and the acknowledged prior art as applied to claim 1 above, and further in view of De Angelis et al. (U.S. Patent# 5566786). Hamaguchi does not disclose a nominal diameter for the carrier cables. De Angelis et al. teaches a synthetic fiber cable able to have a

Art Unit: 3652

nominal diameter between 5 to 7 mm reducing the drive sheave significantly. Therefore, it would have been obvious to one of the ordinary skill in the art to use the synthetic cable taught by De Angelis et al. with a nominal diameter between 5 to 7 mm to further decrease the diameter of the drive sheave.

18. Claim 6 rejected under 35 U.S.C. 103(a) as being unpatentable over Hamaguchi (U.S. Patent# 6626266) in view of Heikkinen (U.S. Patent# 4756388) and the acknowledged prior art as applied to claim 1 above, and further in view of Aulanko et al. (U.S. Patent# 5429211) and De Angelis et al. (U.S. Patent# 5566786). Hamaguchi does not disclose an elevator system configured for useful cage loads of up to 2000 kg and is comprised of carrier cables with a nominal diameter of essentially 7 mm with a ratio of drive sheave diameter to nominal diameter of the carrier cables preferably being about 24. Aulanko et al. teaches a passenger elevator system with a load capacity of 800 kg. Therefore, it would have been obvious to one of the ordinary skill in the art that the passenger elevator system of Hamaguchi is configured for useful cage loads. De Angelis et al. teaches a synthetic fiber cable able to have a nominal diameter of essentially 7 mm reducing the drive sheave significantly. Therefore, it would have been obvious to one of the ordinary skill in the art to use the synthetic cable taught by De Angelis et al. with a nominal diameter essentially 7 mm to further decreasing the ratio of diameter of the drive sheave to nominal diameter of the carrier cables to about 34.

19. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hamaguchi (U.S. Patent# 6626266) in view of Heikkinen (U.S. Patent# 4756388) and the acknowledged prior art as applied to claim 1 above, and further in view of Aulanko

Art Unit: 3652

et al. (U.S. Patent# 5429211). Hamaguchi does not disclose a useful cage load capacity up to 2000 kg. Aulanko et al. teaches a passenger elevator system with a load capacity of 800 kg. Therefore, it would have been obvious to one of the ordinary skill in the art that the passenger elevator system of Hamaguchi is configured for useful cage loads.

20. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hamaguchi (U.S. Patent# 6626266) in view of Heikkinen (U.S. Patent# 4756388) and the acknowledged prior art as applied to claim 1 above, and further in view of Honda (U.S. Patent# 4591025). Honda teaches an elevator system configured in that counter sheave 2 is simultaneously a distancing deflection sheave. Therefore, it would have been obvious to one of the ordinary skill in the art to configure the elevator system of Hamaguchi in that counter sheave 2 is simultaneously a distancing deflection sheave as taught by Honda to reduce the number of sheaves creating more area in the hoistway.

21. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hamaguchi (U.S. Patent# 6626266) in view of Heikkinen (U.S. Patent# 4756388) and the acknowledged prior art as applied to claim 1 above, and further in view of Aulanko et al. (U.S. Patent# 5665944). Hamaguchi does not disclose an elevator system characterized in that for adaptation to occurring cable forces alone the number of applied carrier cables is variable in drive sheave. The drive sheave of Aulanko et al. teaches a plurality of cable grooves 19 on its drive sheave 18 by which the number of applied carrier cables can be varied due to occurring cable forces alone.

Art Unit: 3652

22. Regarding claim 10 Heikkinen further teaches a drive sheave 3 and counter sheave 2 of drive sheave that are vertically arranged with respect to one another and in the area of shaft head Figure 1.

23. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hamaguchi (U.S. Patent# 6626266) in view of Heikkinen (U.S. Patent# 4756388) and the acknowledged prior art as applied to claim 1 above, and further in view of Hollowell et al. (WO 99/43595). Hollowell et al. discloses an elevator system, characterized in that said drive sheave 30 and said counter sheave 34 of said drive sheave drive are arranged on bottom or on the roof of said cage 16. Therefore, it would have been obvious to one of the ordinary skill in the art to incorporate the machine-roomless elevator system configuration taught by Hollowell et al. into the elevator system disclosed by Hamaguchi to reduce space within the hoistway and easy access to the elevator drive sheave.

24. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hamaguchi (U.S. Patent# 6626266) in view of Heikkinen (U.S. Patent# 4756388) and the acknowledged prior art as applied to claim 1 above, and further in view of Hollowell et al. (WO 99/43595). Hollowell et al. discloses an elevator system, characterized in that drive sheave 30 is fixed to the elevator frame 16. Therefore, it would have been obvious to one of the ordinary skill in the art to fix the drive sheave to the elevator frame taught by Hollowell et al. to the elevator system of Hamaguchi to reduce space within the hoistway and easy access to the elevator drive sheave.

25. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hamaguchi (U.S. Patent# 6626266) in view of Heikkinen (U.S. Patent# 4756388) and the acknowledged prior art as applied to claim 1 above, and further in view of Hollowell et al. (WO 99/43595). Hollowell et al. discloses an elevator system, characterized in that holding elements for the drive sheave 30 are integrated in the cage frame 16.

Therefore, it would have been obvious to one of the ordinary skill in the art to integrate the holding elements for the drive sheave to the cage frame taught by Hollowell et al. to the elevator system of Hamaguchi to reduce space within the hoistway and easy access to the elevator drive sheave.

26. Regarding claim 15 Hamaguchi further discloses an effected cage suspension (Embodiment 1) with a ratio of 1 to 1 (Figures 1, 2, and 3).

27. Regarding claim 16 Hamaguchi further discloses an effected loose pulley cage suspension (Embodiment 2) with a ratio of 2 to 1 (Figures 6 and 7).

28. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hamaguchi (U.S. Patent# 6626266) in view of Heikkinen (U.S. Patent# 4756388) and the acknowledged prior art as applied to claim 1 above, and further in view of Damien (U.S. Patent# 5651245). Hamaguchi does not disclose the carrier cables of the elevator system being steel cables. Damien teaches steel lifting cables for use in elevators. Therefore, it would have been obvious to one of the ordinary skill in the art to make the carrier cables of Hamaguchi's elevator system steel cables taught by Damien to decrease the nominal diameter of the cables and maintain a high tensile strength.

29. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hamaguchi (U.S. Patent# 6626266) in view of Heikkinen (U.S. Patent# 4756388) and the acknowledged prior art as applied to claim 1 above, and further in view of Aulanko et al. (U.S. Patent# 5665944). Hamaguchi does not include a three-phase asynchronous and three-phase synchronous drive sheave motor. Aulanko et al. discloses a three-phase asynchronous and three-phase synchronous drive sheave motor for use in a gearless elevator system. The use of the motor taught by Aulanko et al. minimizes the drive sheave as well as adds additional space within the hoistway due to its small size. Therefore, it would have been obvious to one of the ordinary skill in the art to make the motor of Hamaguchi's elevator system a three-phase asynchronous and three-phase synchronous drive sheave motor as taught by Aulanko et al. to minimize space within the elevator hoistway as well as drive the elevator system.

30. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hamaguchi (U.S. Patent# 6626266) in view of Heikkinen (U.S. Patent# 4756388) and the acknowledged prior art as applied to claim 1 above, and further in view of Aulanko et al. (U.S. Patent# 5665944). Aulanko et al. teaches a drive sheave embodied without a mechanical emergency stop braking device to minimize the size of the drive sheave as well as prolong the life span of the drive sheave. Therefore, it would have been obvious to one of the ordinary skill in the art to make the drive sheave of Hamaguchi's elevator system drive sheave embodied without a mechanical emergency stop braking device as taught by Aulanko et al. to increase the life span of the drive sheave.

Art Unit: 3652

31. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hamaguchi (U.S. Patent# 6626266) in view of Heikkinen (U.S. Patent# 4756388) and the acknowledged prior art as applied to claim 1 above, and further in view of Baldassarre (U.S. Patent# 5014828). Baldassarre teaches an emergency stop braking device 10 on the cage, which acts on both sides of the guide rails 6. Therefore, it would have been obvious to one of the ordinary skill in the art to incorporate the emergency braking device of Baldassarre into the elevator system of Hamaguchi to stop the cage in case of an emergency.

Conclusion

32. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure Honda (U.S. Patent# 4591025), Berkovitz (U.S. Patent# 4030569), De Angelis et al. (U.S. Patent# 5566786), Hakala (U.S. Patent# 5566785), Baranda et al. (U.S. Patent# 6739433).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Pico whose telephone number is (571)272-5589.

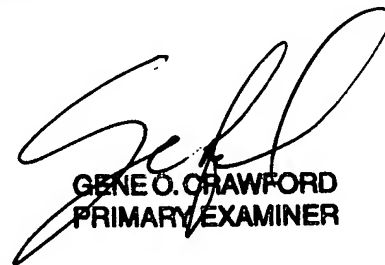
The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen Lillis can be reached on (571)272-6928. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3652

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EEP



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